REMARKS

Claim Status

Claims 1-42 are pending in the application. Claims 18, 25, and 27 have been previously amended. Claims 39-42 have been added. Claims 1, 19, and 38 are the independent claims of the application.

Art Rejections

The Office Action rejected claims 1-16, 19-35, and 38 under 35 U.S.C. §102(e) as being anticipated by Carey, U.S. Patent Number 6,460,174 ("Carey" hereinafter). Claims 17, 18, 36, and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Carey in view of Adams *et al.*, U.S. Patent Publication Number 2001/0042147 ("Adams"). We respectfully traverse the rejection and request reconsideration.

Each of the independent claims 1, 19, and 38 recites the limitation of "wherein each station has a dedicated track which it can use to send information to other stations." The Office Action cited Carey at column 2, lines 29-30, as disclosing this limitation. Carey's cited text reads as follows:

> The distributed routing network 4 can be a series of dedicated connections, one or more shared connections or a mixture of dedicated and shared connections. One example of a shared connection is a bus.

Carey, col. 2, lines 28-32. While the cited text gives one example of a "shared connection" – a bus – it does not explain what constitutes a "dedicated connection." The undersigned attorney has

searched for such a description throughout Carey, but has not identified a single additional instance of the word "dedicated" in that document. It appears that Carey's description of a "dedicated connection" is limited to contrasting the dedicated connection to a "shared connection," such as a bus. Thus, the text quoted above appears to be the sum total of Carey's teaching of "dedicated connection."

Perhaps some guidance regarding "dedicated connection" can be obtained from Carey's description of the routing network used in the integrated circuit shown in that document. In particular, Carey describes Request Transport and Response Transport blocks 34 and 35. Each of these blocks can be a "shared bus" or a "fully connected cross bar." Carey, col. 13, lines 44-50; and col. 14, lines 26-31. One definition of a cross bar (cross-bar) appears below:

> In a network, a cross-bar switch is a device that is capable of channeling data between any two devices that are attached to it up to its maximum number of ports. The paths set up between devices can be fixed for some duration or changed when desired and each device-to-device path (going through the switch) is usually fixed for some period.
>
> Cross-bar topology can be contrasted with bus topology, an arrangement in which there is only one path that all devices share. Traditionally, computers have been connected to storage devices with a large bus. A major advantage of cross-bar switching is that, as the traffic between any two devices increases, it does not affect traffic between other devices. In addition to offering more flexibility, a cross-bar switch environment offers greater scalability than a bus environment.

Techtarget networking dictionary, available on line at http://searchnetworking.techtarget.com/sDefinition/0,,sid7_gci538079,00.html.

Carey does not expressly state that the series of dedicated connections briefly mentioned in column 2, lines 28-32, is in effect a crossbar. But the remainder of that document suggests that this

may indeed be the correct interpretation. Specifically, Carey contrasts a shared bus with both dedicated connection and crossbar, and makes multiple references to routing, connect, and interconnect resources. In any event, Carey apparently does not provide other suggestions as to the meaning of dedicated connection in the particular context.

The independent claims of the present application use identical verbiage to recite the dedicated track limitation: "wherein each station has a dedicated track which it can use to send information to other stations." The meaning of the adjective "dedicated" can be found in most English dictionaries. The shorter Oxford dictionary defines "dedicated," in a somewhat circular fashion, as something "[t]hat has been dedicated." OXFORD UNIVERSITY PRESS, THE NEW SHORTER OXFORD *ENGLISH DICTIONARY* (CD-ROM ed. 1996). With specific reference to computing machinery, the same dictionary defines the word dedicated as "(designed and) used exclusively for a particular purpose or by a particular user." *Id.* Another general purpose dictionary defines dedicated as "given over to a particular purpose." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (Elec. Ed., Ver. 1.2, 1994-96). A computer dictionary gives the following definition of the word: "Of, pertaining to, or being a device, program, or procedure devoted to a single task or function." COMPUTER DICTIONARY 150 (Microsoft, 5th ed., 2002). In sum, "dedicated" can be understood to refer generally to something designed for or committed to a single use, task, function, or purpose. Note that the independent claims recite "dedicated track" not in the abstract, but in association with a station. A dedicated track is therefore a track dedicated to the specific station. Moreover, a station's dedicated track can be used "to send information to other stations," *i.e.*, send information to at least two other stations. In effect, a dedicated track that can be used to send information to other

stations is a one-to-many conduit of data. It is not a crossbar that channels data between two devices subject to the available routing resources within the crossbar. Carey does not teach such dedicated tracks. For these reasons, we respectfully submit that the independent claims 1, 19, and 38 are not anticipated by Carey.

Turning next to dependent claim 4, we have previously argued that each station of the claim includes an arbiter that evaluates requests from other stations and selects a track on which to receive incoming data, while in Carey's device arbitration between or among requests is performed by central control logic. The Office Action responds that Carey's arbiter uses target availability information in making arbitration decisions, and concludes that an arbiter is *assigned* to each station. For the following two reasons, we respectfully traverse the rejection.

First, claim 4 recites a plurality of stations wherein each station includes an arbiter. Thus, the system of claim 4 has a plurality of arbiters. Carey teaches a single, centrally located arbiter. *E.g.*, Carey, col. 13, line 1; *id*, Figure 2. Even if the arbiter 38 could have distributed architecture, Carey does not disclose such architecture. To the contrary, Carey specifically states that arbitration is performed by "central control logic." Carey, col. 2, lines 52-55. Carey has chosen to add the adjective "central" to the control logic element that performs the arbitration function, and depicted the element as a separate block in the block diagram of Figure 1. Furthermore, the fact that the arbiter 38 can use target availability information does not imply that a separate arbiter circuit is built into each target. For example, the target could send to the central arbiter a signal indicating whether the target is available. Such target need not provide arbitration functions; there could still be a

single, centrally located arbiter, as is in fact shown in Carey. Carey does not anticipate claim 4 because Carey does not disclose a plurality of arbiters.

Second, even if a centrally-located arbiter is "assigned" to a station, it is not necessarily "included" in the station. As defined in the specification, a station is a "port to an on-chip communication bus according to the invention." Application, at page 8, line 7. Some degree of co-location of various constituent components of the station should be present. In other words, claim 4 reciting a station that includes an arbiter is not identical to a hypothetical claim that would recite a system *further comprising an arbiter assigned to each station*. Because Carey's central control logic arbiter is not included in the station, Carey does not anticipate claim 4.

Claims 15 and 34 recite that more than one component of the plurality of on-chip components are coupled to the on-chip communication bus through one of the stations. The Office Action states that "[w]hat constitutes a component is not recited," and broadly interprets component "as some item that is addressable beyond the addressing of the port itself." The Office Action cites Carey at column 4, lines 40-49, as teaching this limitation. We respectfully submit that the interpretation of the term component used in the Office Action is overbroad.

The present application does in fact define the term "component":

> Component: A subset of circuits on a chip that perform a particular function or operation. Examples include, but are not limited to, a PCI (peripheral component interconnect) bridge, a USB (universal serial bus) interface, an I2C (inter-integrated-circuit) interface, a UART (universal asynchronous receiver transmitter) interface, a DDR (data direction register) and/or SDRAM (synchronous dynamic access memory), an ethernet interface, a general I/O (input/output) interface, and other circuits and interfaces. Components also can be referred to as peripherals.

Application, page 7, line 23, through page 8, line 5. Therefore, a component is a functional or operational component. It is not merely an addressable location, such as Carey describes in the cited text. Carey does not teach multiple functional/operational components coupled to the bus through one station. For this reason, claims 15 and 34 are believed to be separately patentable over Carey.

The above discussion addresses all independent claims and several dependent claims of the application. As regards the dependent claims not specifically discussed, these claims are patentable together with their base claims and intervening claims, if any.

New claims 39-42 are believed to be patentable together with their independent base claim 1, and because references of record do not disclose or suggest the combinations of elements recited in these claims.

CONCLUSION

For the foregoing reasons. Applicants respectfully submit that all pending claims are patentable over references of record. To discuss any matter pertaining to the present application, the Examiner is invited to call the undersigned attorney at (858) 720-9431.

Having made an effort to bring the application in condition for allowance, a timely notice to this effect is earnestly solicited.

Respectfully submitted,

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